V. FURTHER NOTICE OF PROPOSED RULE MAKING

A. Introduction

110. This Further Notice of Proposed Rule Making (FNPRM) explores methods to promote more efficient and effective use of the PLMR bands below 800 MHz. We do not believe that the current shared regulatory environment contains the proper incentives to encourage efficient spectrum usage. We believe that introducing market-based incentives into these bands will help to encourage more efficient spectrum use while allowing users to make the equipment choices which best address their needs by attaching an economic cost to inefficient use of the spectrum and promoting the use of more efficient technologies. The user community will ultimately benefit from more efficient use of spectrum through the availability of more channels and better quality service. This FNPRM proposes three options to introduce market forces into these bands: exclusivity, user fees, and competitive bidding. We seek comment on each of these options and believe that the information we gather will assist us in developing and implementing an overall strategy on how to promote greater efficiency in these bands.

111. The spectrum in the PLMR bands historically has been available on a shared use basis.[176] The environment that has emerged is characterized by unlimited sharing of the spectrum by over 500,000 licensees with over 12 million mobile units.[177] Because of the significant and varied spectrum use, the PLMR bands have become highly congested and there is a substantial risk that service in these bands will deteriorate to unacceptable levels. Unfortunately, in this shared use environment, PLMR users generally have little incentive to economize on spectrum use because users do not pay for their spectrum, cannot realize the benefit of more efficient use, and generally share their frequency assignments with a number of other users. Instead, other users gain most of the benefits of such conservation. Shared use of spectrum also precludes the use of spectrum efficient technologies, such as trunking and time division multiple access (TDMA) because they generally require centralized channel control. For example, trunked operation (based upon computerized queuing of calls) cannot coexist with other users employing conventional technologies because conventional transmissions do not interact with the automatic equipment that queues trunked messages. Thus, interference between trunked operations and conventional operations prevent their

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[176] Pursuant to Section 90.173(a), 47 C.F.R. § 90.173(a), channels below 470 MHz are shared and additional licensees may be added at any time.

[177] Small businesses represent a significant portion of these licensees due to the availability of low cost radios. PLMR channels are used for a variety of purposes including the transmission of voice and low speed data, paging, and remote control.

coexistence on the same channels.[178] Similarly, TDMA technology requires that all equipment on the same channels interact so that the time is shared among all the radios.

112. We have tentatively concluded that the introduction of market-based incentives such as exclusivity with the right of resale, spectrum fees, and competitive bidding will help address the fundamental inefficiencies inherent in an unlimited shared-use spectrum environment. The application of such market based incentives to PLMR spectrum allocation and assignment will provide greater flexibility in technology choices and open possibilities for increased innovation into the PLMR bands, which will ultimately better serve private user's needs.

113. In this FNPRM, we seek comment on how to best achieve the introduction of exclusivity on channels in the PLMR bands, and to explicitly permit the leasing of excess capacity on these exclusive channels. We believe that offering users the option of exclusivity with the right to resell excess capacity if they agree to convert to narrowband technology by a specified date will promote the use of more efficient technologies such as trunking and TDMA, which are incompatible with the use of other traditional technologies on the same channel. In addition, affording users the opportunity to obtain exclusivity will enable them to benefit directly from the increased capacity which results from their conversion to more efficient technologies, thus encouraging more rapid transition to narrowband technology. In this regard, users will be more likely to install trunked systems if they are certain that additional users, who might interfere with their trunked systems, would not be licensed on their channel. Our experience with the spectrum above 800 MHz supports this theory. The introduction of exclusivity into the 800 MHz bands facilitated and encouraged the use of more spectrum efficient technologies and equipment. We seek here to provide users of the PLMR bands with that same flexibility to use the most advanced and efficient technology available.

114. We also seek comment on how a system of user fees can be used in these bands to encourage licensees to make the most efficient and effective use of the spectrum. Under this approach, users would pay a fee based on the estimated value of the spectrum. The spectrum fee would be calculated based on the area and population covered, and the amount of spectrum used. This type of a user fee structure would attach an economic cost to inefficient spectrum use, thereby motivating users to increase their efficient use of the spectrum. Although the Commission does not currently have statutory authority to impose such a fee structure, this option may be the most effective way to encourage efficiency in the PLMR bands while recognizing the varying needs of the incumbent users. In addition, the underlying budgetary assumptions in the Senate Budget Committee's FY 1996 Budget Resolution proposes to grant the FCC expanded authority to impose fees to encourage more

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[178] Subpart S operations above 800 MHz have separate frequencies set aside for trunked and conventional use. General Category channels above 800 MHz set aside for conventional use may only be trunked with the consent of all users in a geographic area.

"efficient" and "effective" use of the spectrum. Moreover, the user community itself has recognized that market-based user fees may be appropriate in these bands.[179] Manufacturers have also recognized the benefits of market-based user fees in these bands.[180] For the forgoing reasons, we believe it is appropriate to seek comment at this time on whether such a fee structure would be an appropriate mechanism to encourage greater spectrum efficiency in the PLMR bands below 800 MHz and if so, how such fees should be calculated. We believe that seeking further comment on the imposition of user fees at this time will enable the Commission to consider how such fees can best be implemented in the PLMR bands, so that if fee authority is granted, we will be able to act quickly to implement such authority.

115. We seek comment on introducing competitive bidding into these bands as an alternative to user fees. Specifically, we seek comment on a proposal to create geographic overlay licenses and use competitive bidding as the assignment mechanism for these overlay licenses. Competitive bidding of overlay licenses could promote efficiency by allowing the marketplace to determine the value of spectrum and by awarding licenses to those who value them most highly, thus ensuring that spectrum will be put to its highest value use. As with exclusivity, competitive bidding of overlay licenses attaches a cost to inefficient spectrum use. Our experience with competitive bidding to date, shows that it also promotes economic and market-based business decisions and fosters speedy licensing.[181]

116. The Commission's current auction authority does not permit the use of competitive bidding to assign private licenses because these licenses are not mutually exclusive and the principal use of the spectrum does not involve the provision of service to subscribers for a fee.[182] However, expanded auction authority which could include private

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[179] Letter from Harry C. McPherson, Thomas J. Keller, John B. Richards, and Mark E. Crosby to Alice M. Rivlin dated February 2, 1995 at 3. "The Administration should carefully consider . . . whether additional user fees may be appropriate to ensure that the Federal government receives a fair return for private wireless use of the scarce national spectrum resource."

[180] See *ex parte* letter from Linear Modulation Technology (LMT) dated May 16, 1995 at page 1. "LMT believes that license fees for PLMR systems . . . would allocate the true costs of PLMR service and spectrum usage in an economically-efficient manner."

[181] On average, winning bidders in the Commission's spectrum auctions have received their licenses in four months.

[182] In the matter of Implementation of Section 309(j) of the Communications Act - Competitive Bidding, Second Report and Order, PP Docket No. 93-253, 9 FCC Rcd 2348 at para. 13 (1994)

wireless users is proposed by the Administration[183] and the Senate.[184] Accordingly, we believe that it is appropriate at this time to seek comment on how auctions could best be implemented for PLMR licenses, if such authority is granted.

117. Additionally, we seek comment on the treatment of public safety users with respect to market-based incentives. Public safety users are charged with the protection of life and property, and the Commission is committed to ensuring that such users have access to spectrum to perform their critical function. We seek comment on exempting public safety users from spectrum fees and competitive bidding, or developing a reduced fee structure and a protected auction environment for these users.

B. Exclusivity

118. As we have indicated throughout this proceeding, we believe that exclusivity will provide the proper incentives for users to efficiently use spectrum. Exclusivity enables users to introduce more spectrally efficient technologies, such as trunking, without the concern that other users will be licensed on their channels using conventional equipment that may interfere with their trunked equipment. In the PLMR bands above 800 MHz, the Commission implemented the use of exclusive frequencies in part to encourage spectrum efficient technologies such as trunking.[185] Moreover, without exclusivity, other spectrum efficient techniques, such as cellular radio and some digital multiple access techniques are inefficient or impractical because users are not able to benefit from the use of these more advanced technologies.

119. We have tentatively concluded that the introduction of exclusivity is important in these bands because it will make users realize directly the opportunity cost of inefficient spectrum use. Licensees will have greater incentive to convert to more efficient technologies if they are granted exclusive rights to a particular channel or channels in a given area.[186] While a licensee with exclusive use of a channel may continue to be inefficient in the short term, over time rational licensees will seek to maximize the value of "their" spectrum in the

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[183] See United States Office of Management and Budget, Budget of United States Government, Fiscal Year 1996, pages 255-256.

[184] Senate Committee on Budget, Concurrent Resolution on Budget for FY 1996 to accompany S. Con. Res. 13, S. Rep. No. 104-82, 104th Cong., 1st Sess. 199-200 (1995).

[185] Report and Order, PR Docket No. 89-552, 56 Fed. Reg. 19598 (1991)

[186] See Evan R. Kwerel and John R. Williams, *Moving toward a Market for Spectrum*, Cato Review of Business & Government, 1993, Number 2; Ronald Coase, *The Federal Communications Commission*, Journal of Law and Economics, vol. 2, 1-40 (1959).

same way they would otherwise seek to maximize the value of an asset such as land. An essential element of exclusivity, however, is the right to resell excess capacity. Allowing exclusive licensees to resell excess capacity is necessary to ensure that the spectrum can be efficiently used by another party if that party has a higher valued use for the spectrum. Higher valued uses can be achieved either through alternative applications or through better operational or financial management (i.e., economies of scale which result from consolidation of multiple smaller operations). In addition, resale will ensure that the price for spectrum use remains low and that new licensees retain the ability to use spectrum.

120. In this FNPRM, we propose to provide users the option of obtaining exclusive channel assignments if they agree to convert to narrowband equipment by a specified date. Such exclusivity will facilitate the deployment of new technologies and encourage more efficient spectrum use. We propose to allow licensees who agree to convert to narrowband technologies within five years from the effective date of this item to enter into contractual agreements with neighboring co-channel licensees to establish areas of exclusive assignment, thereby precluding new co-channel licensees from being licensed, except by mutual agreement of all parties to the exclusivity plan. We also propose to allow licensees, who are parties to an exclusivity agreement and who have converted their system to narrowband technology, to have the right to resell excess capacity.

121. Refarming Notice. Generally, the Commission's Rules governing the PLMR bands below 800 MHz do not provide for channel exclusivity.[187] Instead, they provide for unlimited shared use. *De facto* exclusivity may exist where current channel occupants have operations that may not be readily shared by others, or where a channel is so congested that it is not a viable alternative for prospective new operations. We first discussed introducing exclusivity into the PLMR bands in the Notice of Inquiry. Based on the comments generated by the Notice of Inquiry, we noted in the Refarming Notice that traditional exclusivity would not be suited to this highly shared environment.[188] Instead, we proposed to introduce a type of shared exclusivity, referred to as Exclusive Use Overlay (EUO), below 470 MHz, which would enable users to protect their radio environment and limit future assignments. Pursuant to the EUO plan, new and existing licensees would be granted "the exclusive right" to add to the existing radio use on a given frequency in a specific geographic area. The exclusive use overlay licensee would have sole access to the "current and future residual communications capacity" on those channels in that market. In order to obtain an exclusive overlay license, an applicant on a channel with no existing licensees was required to employ highly efficient equipment based on an efficiency standard set above the level of currently available equipment. [189]

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[187] The current rules allow for exclusive assignments in the 470-512 MHz band if a certain number of mobiles are maintained.

[188] Refarming Notice at para. 12.

[189] Refarming Notice at Appendix A.

122. Specifically, under the EUO a licensee could convert channels to exclusive use and thereby limit co-channel assignments within 80 km (50 mi) of a base station if other co-channel licensees, as determined by loading, concurred, and the following loading standards were met: 70 mobiles per channel within the New York and Los Angeles metropolitan areas; 50 mobiles per channel in 73 other geographically broad markets; or 20 mobiles per channel in the rest of the country. In this manner, we hoped to provide a stimulus for licensees to employ more efficient technologies, such as centralized trunking, which generally require exclusive assignments.[190] In addition to providing this option for licensees of large systems, we proposed allowing the EUO mechanism to be invoked when a licensee could show that failure of a system would create an imminent danger to public safety.[191] Finally, we proposed to exclude a number of channels for general business use from employing this option.

123. Comments. Our EUO proposal received broad commenter support. However, some commenters argue that we should exercise caution and noted the benefits of shared spectrum. In support of the exclusivity option, the Coalition of Industrial and Land Transportation Land Mobile Radio Users state that "[i]nterference-free frequency assignments are necessary for safety-related land mobile communications systems.... Exclusive assignments are ... also necessary for advanced technology systems...."[192] Ericsson supports the EUO plan as proposed. Others, such as NABER and ATA however, support exclusivity but note that sufficient loading requirements are necessary to maintain efficiency.[193] Other commenters generally supporting our EUO proposal include: LMCC, Arizona Department of Public Safety, Arizona Chapter of APCO, and API.[194] A few commenters indicate that the proposal is not actually exclusivity and suggest that the Commission avoid using the term "exclusive."

124. AMRA, who opposes our proposal to designate some frequencies for exclusive use, argues that all frequencies should be available for shared and exclusive assignments.[195]

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[190] Trunking provides a three fold increase over conventional systems in spectrum efficiency. See NTIA report 94-311.

[191] For example, failure of a certain railroad radio system could directly lead to railroad accidents. Refarming Notice at Appendix A, footnote 13.

[192] Comments of the Coalition of Industrial and Land Transportation Land Mobile Radio Users at 20.

[193] See, for example, comments of ATA at 8.

[194] Comments of LMCC at 22-23; Comments of Arizona Department of Public Safety at 9-10; Comments of Arizona Chapter of APCO at 10-11; Comments of API at 9-12.

[195] Comments of AMRA at 8.

In opposing our exclusivity proposal, Motorola emphasizes that shared channels are an efficient way to meet the needs of huge numbers of small PLMR users. Motorola notes that in urban areas it is not uncommon for several hundred mobile units to be shared on a single frequency, easily exceeding the exclusivity requirement of 70 mobiles per channel for systems operating above 800 MHz.[196] NABER also expresses concern that for-profit carriers would unduly benefit from the EUO proposal at the expense of small user-owned private land mobile systems.[197] Public safety and safety-related services recognize the necessity of having interference-free assignments; however, APCO, AASHTO, and AAR generally oppose the proposal due to loading requirements.

125. Discussion. Channel exclusivity generally translates into better service for the licensee and is necessary to facilitate the introduction of spectrum efficient technologies, e.g., centralized trunking and TDMA. Exclusivity also creates incentives to use spectrum efficiently by making users realize the opportunity cost of inefficient spectrum use. Additionally, channel exclusivity serves the needs of major radio system operators, i.e., those seeking to install large, wide area networks. Exclusivity creates "ownership" rights, which motivate licensees to make more efficient use of spectrum because the advantages gained from exclusivity accrue directly to the licensee. Whereas, on shared use channels the benefits and increased capacity gained if one licensee installs more spectrally efficient equipment are shared by all the channel's users. Therefore, we conclude that the option of exclusive licensing will be an important element in our overall strategy to increase efficiency in the PLMR bands.

126. The introduction of exclusivity into these bands is complicated by the fact that this spectrum has historically been licensed on an unlimited shared basis. Thus, additional users currently may be added at any time.[198] As a result, many of the channels, particularly in large urban areas have become severely congested. On shared channels, the advantages gained if one licensee is spectrum efficient are shared by all the licensees on the channel. In certain radio services the number of existing licensees per channel is quite small. On such channels, existing licensees would be in a position to quickly agree to maximize the value of the channel by converting to more efficient technology and thereby obtain exclusivity. Where channels are congested with numerous licensees, implementing advanced technologies may be quite difficult. The need to relieve congestion and the ability to cap the number of new co-channel users should, however, encourage coordination among existing users to implement advanced technology. Moreover, while the introduction of exclusivity on these channels will likely reduce the number of future licensees on certain channels, it will increase the efficient use of the spectrum through the introduction of more advanced technology and result in improved service. Thus, while we recognize that introducing exclusivity will in

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[196] Reply Comments of Motorola at 26 and 27

[197] Comments of NABER at 17.

[198] See footnote 176.

some ways change the profile of these bands, we believe that the overall efficiency gains and improvements in the quality of service, will outweigh losses in the volume of users. In any event, applicants seeking licenses for new systems would have the option of seeking assignments on other shared bands or paying to lease excess capacity from exclusive licensees. We also believe that, in this environment, licensees in other bands will have incentives to implement advanced technologies that can be used to provide service, for a profit, to new PLMR users.

127. While a majority of commenters supported the idea of exclusivity, the EUO plan proposed in the Refarming Notice was not sufficiently specific and raised a substantial number of additional questions that warrant further comment. For example, what efficiency standard should be required before users are eligible to apply for exclusivity? Over what period of time should users be required to convert to more efficient technology? Over what geographic areas should exclusive licenses be granted? Should the option of exclusivity be limited to existing users? Should exclusivity be permitted on all bands or should some bands be reserved for shared use so that all new requests for spectrum assignments can be accommodated? What rules should be adopted regarding adjacent channel interference between shared and exclusive channels? How should exclusivity be implemented? How will negotiations between existing users be effected by consolidation of the radio services. Detailed comments addressing these important issues are necessary before the Commission can adopt a workable exclusivity plan.

128. Since Congress is currently considering expanding the Commission's auction authority, we believe that it is appropriate to seek further comment on whether our exclusivity proposal should be modified if auction authority is obtained for these bands. Similarly, Congress is currently considering granting the Commission authority to impose fees to encourage more efficient use of the spectrum. We believe that imposing user fees in conjunction with exclusivity may be the best way to achieve greater efficiency in the PLMR bands. Accordingly, we seek further comment on how such fees should be structured for exclusive grants as opposed to licenses for shared use. In addition, a plethora of new commercial mobile wireless services and technologies are being introduced that may serve as economically efficient alternatives to existing private systems. For example, cellular, SMRs, paging and PCS may provide efficient alternatives to existing private services. Consequently, we seek comment on how these commercial services can be used to fulfill some of the needs of private wireless users. Finally, we seek comment on how exclusivity should be administered in light of the consolidation of the radio services.

129. FNPRM. For the purposes of this FNPRM, we propose a modified version of the EUO proposal that is not based on loading, but rather provides economic and operational incentives for existing licensees to convert early to narrowband (NB) technologies.[199] This

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[199] By narrowband (NB) technology, we mean equipment designed to operate on channel bandwidths of 7.5 kHz or less at VHF and 6.25 kHz or less at UHF or any equivalent

"shared exclusivity" plan will provide an option for existing licensees in the four refarming bands (150-174, 421-430, 450-470, and 470-512 MHz) to develop arrangements that facilitate the deployment of efficient technologies and increase their quality of service.[200] Under the shared-exclusivity plan, we propose the following provisions for licensees:

> (a) Licensees would have the option to enter into contractual agreements with neighboring co-channel licensees to establish areas of exclusive assignment, thereby precluding new co-channel licensees from being licensed within the area, except by mutual agreement of all parties to the exclusivity plan. To achieve this cap on new assignments, all licensees on the channel must agree to convert to narrowband technology. Under our proposal, a single existing licensee may request exclusivity over the extent of its service area if there are no other licensees in the area.
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> (b) These exclusivity agreements must be filed with the appropriate frequency coordinator no later than August 31, 2000.[201] To provide licensees a reasonable amount of time to reach an agreement, we propose to allow licensees to request that frequency coordinators stop processing any requests for new co-channel assignments in their geographic area for a period of 90 days while an agreement is being negotiated. Ninety days appears to strike a fair balance between the time required for licensees to negotiate a mutual agreement and the time that would not cause any prolonged delay in licensing, should a mutual agreement not be reached. The licensees participating in such a mutual agreement must also file to modify their licenses.
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> (c) Licensees that are parties to exclusivity agreements and have completed the conversion of their systems to narrowband technologies would be granted the right to lease any excess capacity created on their channels. This will permit licensees to capture some of the benefits of their investment in spectrally-efficient technology as well as ensure that spectrum is made available for other higher value uses.

130. Exclusivity will provide a strong incentive for early transition to narrowband

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technologies.

[200] It is important to note that the term "exclusivity" as it is used in this proceeding is different from the way the term is used in the PLMR bands above 800 MHz. Above 800 MHz, exclusivity means that there are no other co-channel licensees within a certain mileage radius of the base station. This can be assured since exclusivity was permitted when the spectrum was first made available for PLMR use. The term "exclusivity" here applies to protection from (e.g., a cap on) future licensees. All existing licensees can remain on their channel on a co-primary basis and add additional mobile units.

[201] The licensee(s) must inform all coordinators who have responsibility over that frequency or frequencies, regardless of the radio service in which they are applying.

technologies because users can benefit directly from the additional capacity created, as well as from better quality service. In addition, exclusivity will enable existing licensees to employ certain spectrum efficient technologies and promote market-based decisions.

131. We seek comment specifically on the following issues as they relate to exclusivity: (1) What amount of time should licensees who agree to convert to narrowband technology in exchange for exclusivity be allowed to actually convert their systems?; (2) Should exclusivity be available on all channels or should some channels be reserved for shared use?; (3) Should single entities be permitted to obtain exclusivity?; (4) Should the exclusivity option be limited to existing users?; and (5) What standards for narrowband efficiency should be required for exclusivity? Comments should focus on how to best implement exclusivity and how to remedy imperfections in the plan we have outlined.

132. We propose that to determine the geographic area in which we will grant exclusive licenses, the composite service area of all licenses that are a party to the agreement be used. Specifically, we propose that the geographic service area will be assumed to encompass a circular area[202] around each base station of all parties to the agreement. Pursuant to this proposal, licensees would be permitted to cap future co-channel assignments within this "exclusive" service area. In order to prevent interference to users within exclusive service areas, we propose to require future co-channel licensees to meet minimum distances to all stations participating in exclusivity agreements.[203] Additionally, we propose that if a licensee is participating in an exclusivity agreement and expands its system outside the exclusive service area, the portion of its expanded service area that falls outside of the exclusivity service area will not be afforded any protection from existing or future co-channel licensees unless the agreement is modified to denote a new "exclusive" service area. We seek comment on these proposals and encourage the submission of alternative proposals as well.

133. We propose that all "shared exclusivity" agreements be processed by a frequency coordinator and maintained on file. To reduce the filing of exclusivity agreements by entities that have no real intention of implementing such agreements, we also propose that each notification of an exclusivity agreement include a detailed plan on how the participants will implement narrowband systems. This plan must include benchmarks by which we can measure the licensee's progress towards fulfilling their plans. In the event that licensees fail to meet these benchmarks, we propose to cancel the exclusive grant and convert the licenses to shared use. We request comment on appropriate guidelines for measuring this progress.

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[202] The service area would be based on the tables which relate power heights and antenna levels.

[203] The proposed minimum distance separation tables are based on the LMCC safe harbor tables.

134. We further propose to permit licensees who choose to implement this exclusivity option the right to lease excess capacity on their systems. We believe that affording licensees the right to lease excess capacity will create economic incentives to encourage more efficient use of the spectrum by attaching an opportunity cost to inefficient spectrum use. We propose to allow licensees who choose the exclusivity option to lease excess capacity to any party without restriction in order to promote more flexible use of this spectrum. We seek comment, however, on whether such leasing arrangements should be limited to PLMR eligibles in order to ensure that sufficient spectrum is available to satisfy the needs of the PLMR community. Our preliminary conclusion is that restriction on such arrangements is not necessary because we believe spectrum will go to its highest value use if it is available to the widest possible number of users. We do not believe that it will be necessary to regulate the prices for spectrum that is leased in these bands since these channels will compete with a wide variety of wireless communications options. Instead, we believe that it is preferable to allow the marketplace to determine the value of the use of this spectrum.

135. Finally, we seek comment on whether these proposals for PLMR exclusivity will affect whether traditional PLMR users, who seek to lease excess capacity, are considered commercial mobile radio service (CMRS) providers as defined in the Commission's CMRS rule making proceeding.[204] We tentatively conclude that licensees who lease excess capacity will have that aspect of their operations regulated as CMRS. We seek comment on our tentative conclusion that the lease of excess capacity will change the regulatory status of that aspect of a PLMR entity's business. We also seek comment on how our exclusivity proposals should be modified if legislation is passed which grants the Commission authority to auction spectrum in the PLMR bands or to impose a user fee structure, as discussed more fully below.

C. User Fees

136. Another proposal for introducing market-based incentives into the PLMR bands is to implement market-based user fees as an alternative to, or in conjunction with, competitive bidding and exclusivity. We previously sought comment on the use of such fees in the Notice of Inquiry[205] and we continue to believe that such market-based user fees are a desirable means for encouraging greater spectrum efficiency. As we previously noted, the imposition of a market-based user fee would associate a direct economic cost with inefficient spectrum use. Under our current proposal, users would pay a spectrum fee based on how

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[204] Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, GN Docket No. 93-352, Second Report and Order, 9 FCC Rcd 1411 (1994)

[205] See Notice Of Inquiry at para. 65.

efficiently they use their spectrum.[206] We propose to provide direct economic incentives to implement spectrum efficient equipment by imposing spectrum fees that vary according to factors such as bandwidth, area of operation and population. Although the Commission does not currently have statutory authority to impose user fees in these bands,[207] the underlying budgetary assumptions of the Senate Budget Committee's FY 1996 Budget Resolution proposes to grant the FCC expanded authority to impose fees to encourage more "efficient" and "effective" use of the spectrum. Moreover, some members of the user community have recognized that market-based user fees may be appropriate in these band.[208] Manufacturers have also recognized the potential advantages associated with market-based user fees.[209] Accordingly, in this FNPRM we seek additional comment on how such user fees may be implemented into the PLMR bands to provide incentives for more efficient spectrum use and how such fees should be calculated.

137. If Congress grants the FCC fee authority, we propose to impose a fee structure intended to cause users to realize the opportunity cost of their spectrum usage. We believe that such a fee structure would include factors such as bandwidth, area of operation, population coverage and population density. The imposition of such a fee structure would enable users to select the technology best suited to their needs while providing direct financial incentives for efficient spectrum use. A fee structure of this nature imposes a direct economic cost on inefficient spectrum use and forces users to weigh the costs of employing more spectrum efficient equipment against a fee designed to approximate the opportunity cost of the spectrum to other users. This approach is also desirable because it emphasizes technical flexibility rather than strict technical standards.

138. If the Commission receives authority to impose user fees, we believe that such fees should reflect the market value of the spectrum. Therefore, we seek comment on establishing a fee structure based on the market prices of similarly situated spectrum bands.

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[206] The imposition of user fees was addressed in the Refarming Inquiry. See Notice of Inquiry at para 65-69.

[207] 47 U.S.C. §158 currently limits the FCC's fee authority to the imposition of relatively nominal application fees.

[208] See Letter to Alice Rivlin, Director of the Office of Management and Budget, dated February 2, 1995 from the Association of American Railroads, the Land Mobile Communications Council, the American Petroleum Institute and the Industrial Telecommunications Council at P. 3. "The Administration should carefully consider . . . whether additional user fees may be appropriate to ensure that the Federal government receives a fair return for private wireless use of the scarce national spectrum resource."

[209] See *ex parte* letter from Linear Modulation Technology (LMT) dated May 16, 1995 at page 1. "LMT believes that license fees for PLMR systems . . . would allocate the true costs of PLMR service and spectrum usage in an economically-efficient manner."

For example, IVDS and Narrowband PCS auction prices may provide relevant valuations to assist us in determining the appropriate fee to impose in these spectrum bands. Moreover, user fees should also reflect the demographics of the licensed area so that a licensee in a small rural area does not pay the same user fee as a licensee in a major urban center, where demand for spectrum is especially high. Therefore, we also seek comment on whether fees should reflect the population and geographic size of the licensed area. We also seek comment on the relationship between our proposals for exclusivity and user fees. For example, we propose charging a lower fee for shared use than for exclusive use. Higher fees for exclusive use are appropriate because exclusivity enables users to achieve a higher quality of service than shared users. We also seek comment on the appropriateness of a fee per mobile in shared (non-exclusive) bands.

139. We recognize that implementation and enforcement of this type of fee structure may be difficult. For example, licensees may have an incentive to under report population covered, bandwidth, and other operational parameters. Users might also exaggerate efficiencies gained from narrowband technologies or trunking. Accordingly, we seek comment on what mechanisms should be adopted to ensure that such a fee program could be adequately enforced.

140. Finally, we propose that public safety users should be exempt from user fees. Public safety users have traditionally merited special treatment because they are charged with the protection of human life and property.[210] We seek comments regarding this proposal. As an alternative, we seek comments on a reduced or nominal fee structure for public safety users. Such an option would cause these users to recognize the opportunity cost of inefficient spectrum use. Further, this alternative would provide a mechanism for individual public safety entities to examine their need for critical safety related communication resources. Therefore, we seek comment on the merits of a nominal fee versus a no-fee approach with respect to the benefits that each would provide to public safety users and the communities in which they serve. The Commission is committed to ensuring that needs of public safety users are adequately addressed and that such users have access to sufficient, affordable spectrum to perform their critical function.

D. Competitive Bidding

141. Competitive bidding is an alternative mechanism that would lead to efficient use of the PLMR bands below 800 MHz. If we use competitive bidding in these bands, we propose to create geographic overlay licenses and then use competitive bidding as the method to assign these licenses. Our experience in conducting PCS auctions shows that using competitive bidding to assign licenses fosters speedy licensing and promotes economic and

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[210] For example, 6 MHz of spectrum was allocated for public safety use. Gen. Dkt. Nos. 84-1231, 84-1233, and 84-1234, 2 FCC Rcd 1825 (1986).

market-based business decisions over protracted government regulation. It also promotes efficient spectrum use by allowing the marketplace to determine the value of licenses and by awarding licenses to those who value them most highly. Competitive bidding further promotes market-based decision making, by allowing bidders to obtain the aggregation of licenses which best suit their business needs, without the need to acquire licenses in inefficient secondary market transactions. Thus, auctions eliminate unnecessary transaction costs in acquiring spectrum to implement advanced communications services. Finally, competitive bidding can raise substantial new revenues for the U.S. Treasury, ensuring that the public receives compensation for the use of the valuable spectrum resource.

142. The Commission's ability to introduce auctions for PLMR licenses is complicated by the current shared use environment and by the large number of incumbents licensed on some channels in some areas. Mandatory relocation of incumbents may not be feasible in these bands because of the lack of alternative channels for relocation. Accordingly, if auctions are used to award licenses in the PLMR bands, we propose to create overlay licenses on a geographic basis then auction these licenses. Such overlay licenses would contain certain rights and responsibilities relating to the incumbent users. For example, the overlay licensee would be required to provide co-channel protection and adjacent channel interference protection for incumbent users. While incumbents would be entitled to full co-channel interference protection for their existing facilities, they would not be allowed to expand beyond their existing service area unless they obtained the overlay license, or negotiated with the overlay licensee. The overlay licensee would be able to cap the number of users allowed on its channel within its geographic area and could negotiate voluntary mergers, buyouts, frequency swaps, or similar arrangements with incumbents.

143. The objective of this proposal is to introduce market forces into the PLMR bands through the overlay license, while allowing incumbents to continue existing operations without harmful interference. A similar proposal was made with respect to 900 MHz SMR systems in the Second Report and Order and Further Notice of Proposed Rule Making, in PR Docket No. 89-553, PP Docket No. 93-253 (released April 17, 1995). We believe that this overlay license will increase efficiency because of the economic incentives to promote spectrum efficiency. The overlay licensee will incur an opportunity cost if spectrum is not used as efficiently as possible and will therefore have incentives to encourage maximum efficiency by incumbent users. We seek comment on this proposal. Specifically, we ask commenters to indicate what geographic areas should be created for the overlay licenses. We also seek comment on what interference standards should be adopted for incumbent users. Commenters should also address how we should define "existing facilities" for which incumbents would be entitled to interference protection. What types of modifications and expansions, if any, should incumbents be permitted to make? Commenters should also address what type of auction method should be used for these bands and whether any eligibility restrictions are appropriate. We tentatively conclude that such auctions should be open to all potential bidders in order to ensure that the overlay licenses will be awarded to the parties that value them the most highly and to promote more flexible use of the spectrum.

144. An alternative to our auction of overlay licenses is to hold in reserve any channels that are created as users migrate to narrower channel widths. We would then aggregate these channels in appropriate geographic areas and offer them for auction. We seek comment on the feasibility of this proposal, whether sufficient channels will be available in a reasonable time frame to conduct an auction, and whether geographic aggregation is realistic.

145. Except for licensees who choose to be private carriers,[211] the PLMR bands are occupied by licensees that do not provide subscriber-based services. Thus, pursuant to our current statutory authority, competitive bidding for these licenses is precluded. In implementing our statutory authority, we concluded that "where mutual exclusivity between applications cannot exist because channels must be shared by multiple licensees" auctions are precluded.[212] In addition, we have also determined that our existing statutory authority excludes from competitive bidding "those services or classes of services in which licensees do not receive compensation from subscribers, and, hence, are outside the scope of Section 309(j)(2)(A) [47 U.S.C. § 309(j)(2)(A)]."[213] Although the Commission does not currently have statutory authority to auction spectrum for PLMR licenses, the underlying budgetary assumptions of the Senate Budget Committee's FY 1996 Budget Resolution propose expanding the Commission's auction authority to include additional spectrum.[214] The Administration has also proposed expanded auction authority.[215]

146. We tentatively conclude that public safety users should be exempt from competitive bidding for overlay licenses, or another type of competitive bidding mechanism, if adopted. Public safety users have traditionally argued for special treatment because they are charged with protecting human life and property.[216] We seek comment on whether channels should be set aside for exclusive public safety use and therefore not be available for

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[211] See 47 C.F.R. § 90.179(a).

[212] In the Matter of Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, Second Report and Order, PP Docket No. 93-253, 9 FCC Rcd 2348 at para. 13 (1994).

[213] Second Report and Order, PP Docket No. 93-253, 9 FCC Rcd 2348, at para. 23 (1994).

[214] Senate Committee on Budget, Concurrent Resolution on Budget for FY 1996 to accompany S. Con. Res. 13, S. Rep. No. 104-82, 104th Cong., 1st Sess. 199-200 (1995).

[215] See United States Office of Management and Budget, Budget of United States Government, Fiscal Year 1996, pages 255-256.

[216] For example, 6 MHz of spectrum was allocated for public safety use. Gen. Dkt. Nos. 84-1231, 84-1233, and 84-1234, 2 FCC Rcd 1825 (1986).

auction. We also seek alternative proposals on the best mechanism to ensure that public safety users maintain access to spectrum that is critical to the performance of their public service responsibilities.

147. Finally, we seek comment on the types of services winning bidders should be permitted to offer. We propose to amend the allocation rules for these bands to allow winning bidders to use the spectrum to provide either private services, commercial services or some combination of the two. However, we seek comment on whether some limitations should be placed on the permissible use of this spectrum. Commenters are encouraged to identify which PLMR bands, if any, should be excluded from competitive bidding.

E. New Channels

148. Finally, the Commission seeks comment on how to treat new channels created as a result of users converting from 25 kHz channels to 12.5 kHz or 6.25 kHz channels. This issue will arise only in the absence of competitive bidding for overlay licenses. Spectrum that may be "cleared" as the conversion to narrowband technologies occurs is likely to be in small, non-contiguous blocks located geographically between groups of existing licensees. We seek comment on how we can create channels from "cleared" spectrum in a particular geographic area. Additionally, we seek comment on how to allocate and assign such channels. We seek comment on various alternatives, including: freezing licensing on such channels until they can be auctioned, allocating some or all of the "new" channels to public safety users, or dividing such channels between the consolidated radio services for assignment to new users.

VI. PROCEDURAL MATTERS

149. Ordering Clause. IT IS ORDERED that Part 90 of the Commission's Rules and Regulations **IS AMENDED** as specified in Appendix F, effective 30 days after publication in the Federal Register. Authority for issuance of this Report and Order and Further Notice of Proposed Rule Making is contained in Sections 4(i), 302, 303(g), 303(r), and 332(a) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 302, 303(g), 303(r), and 332(a).

150. Ex Parte Rules Non-Restricted Proceeding. This is a non-restricted notice and comment rule making proceeding. Ex parte presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in the Commission rules. See generally 47 C.F.R. §§ 1.202, 1.1203, and 1.1206(a).

151. Regulatory Flexibility Analysis. The analysis required by the Regulatory Flexibility Act of 1980, 5 U.S.C. § 608 is set forth in Appendices D and E attached.

152. Comment Dates. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments on or before **September 15, 1995** and reply comments on or before **October 16, 1995**. To file formally in this proceeding you must file an original and four copies of all comments, reply comments, and supporting comments. If you want each Commissioner to receive a personal copy of your comments, you must file an original plus nine copies. You should send comments and reply comments to Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center, Room 239, 1919 M Street, N.W., Washington, D.C. 20554.

153. Contact Person. For further information regarding this proceeding, contact Ira Keltz or Mark Rubin at 202-418-0680.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

APPENDIX A

LIST OF FIGURES

FIGURE 1 - PRIVATE LAND MOBILE RADIO SERVICES

DESCRIPTION OF PRIVATE LAND MOBILE RADIO SERVICES BELOW 470 MHz	NUMBER OF TRANSMITTERS[1]	NUMBER OF CHANNELS		FREQUENCY COORD.[10]
		VHF[2]	UHF[3]	
BUSINESS: educational, religious, hospital, small business, etc.	3,575,223	109[4]	289	NABER(PCIA)
POLICE: protection of citizens in emergency and non-emergency situations	1,550,394	75	86	APCO
LOCAL GOVERNMENT: official functions of governmental activities	1,382,647	80	78	APCO
SPECIAL INDUSTRIAL: heavy construction (roads/bridges), farming, and mining	843,747	81[5]	30	ITA
FIRE: fire protection services by state and local entities	826,773	38	48	IMSA
POWER: electricity, natural or manufactured gas, water and steam	768,551	77	40	UTC
RAILROAD: rail transport of passengers and freight	742,454	119	20	AAR
SPECIAL EMERGENCY:[6] protection of life and property for emergency medical care	419,436	19[7]	74[8]	IMSA/IAFC NABER(PCIA)
FORESTRY CONSERVATION: protection and conservation of forests and wildlife	356,607	58	38	AASHTO
PETROLEUM: production, collection, and refining petroleum products by pipeline	340,913	103	36	PFCC of API
HIGHWAY MAINTENANCE: construction and maintenance of highway activities	335,109	43	38	AASHTO
MANUFACTURERS: plants, factories, mills, and shipyards	308,227	52	48	MRFAC
MOTOR CARRIER: trucking (short and long haul) and public buses	182,598	56	30	ATA
TELEPHONE MAINTENANCE: daily repair and emergency restoration	137,640	10	36	TELFAC
TAXI CABS: nonscheduled passenger land transportation	123,864	36	24	ITLA
FOREST PRODUCTS: logging, hauling, and manufacturing of lumber products	119,428	106	50	FIT
AUTOMOBILE EMERGENCY: dispatching of repair trucks, tow trucks, etc.	35,877	23	4	AAA
RELAY PRESS: publication and operation of newspaper and press	22,017	12	4	ANPA
VIDEO PRODUCTION: producing, videotaping, filming of movies and television programs	12,794	18	0	AMPTP
TOTALS: 20 Radio Services (includes EMRS)[6]	12,084,299	553[9]	324[9]	

NOTES

1. Station count represents the total transmitters (including mobiles) licensed as of December 1994.

2. VHF denotes channels assigned in the 150 - 174 MHz band, including the 169 - 174 MHz channels available on a secondary basis to the Federal Government.

3. UHF denotes channels assigned in the 450 - 470 MHz band.

4. The number includes the 44 channels used only in Puerto Rico and the US Virgin Islands.

5. The number includes the 14 channels used only in Puerto Rico and the US Virgin Islands.

6. The Special Emergency channel count includes channels designated to the EMRS service. A recent rulemaking directed that channels previously allocated to the Special Emergency Radio Service be reallocated to the EMRS service. EMRS channels are used for time critical protection of life and property and emergency medical care while Special Emergency is used for administrative communications regarding safety.

7. The number includes 11 channels designated for Special Emergency, 7 channels designated for EMRS, and 8 channels shared between the two.

8. The number includes 70 channels designated for EMRS, and 4 channels shared between the two.

9. Total channel count does not equal sum of the column because many channels are shared between services.

10. Frequency coordinator acronyms:

AAA	American Automobile Association
AASHTO	American Association of State Highway and Transportation Officials
AAR	Association of American Railroads
AMPTP	Alliance of Motion Picture and Television Producers
ANPA	American Newspaper Publishers Association
APCO	Association of Public Safety Communications Officials - International, Inc.
API	American Petroleum Institute
FIT	Forest Industries Telecommunications
IAFC	International Association of Fire Chiefs
IMSA	International Municipal Signal Association
ITA	Industrial Telecommunications Association, Inc.
ITLA	International Taxicab and Livery Association
MRFAC	Manufacturers Radio Frequency Advisory Committee
NABER	National Association of Business and Educational Radio (merged with PCIA)
PCIA	Personal Communications Industry Association
PFCC	Petroleum Frequency Coordinating Committee
TELFAC	Telephone Maintenance Frequency Advisory Committee
UTC	Utilities Telecommunications Committee

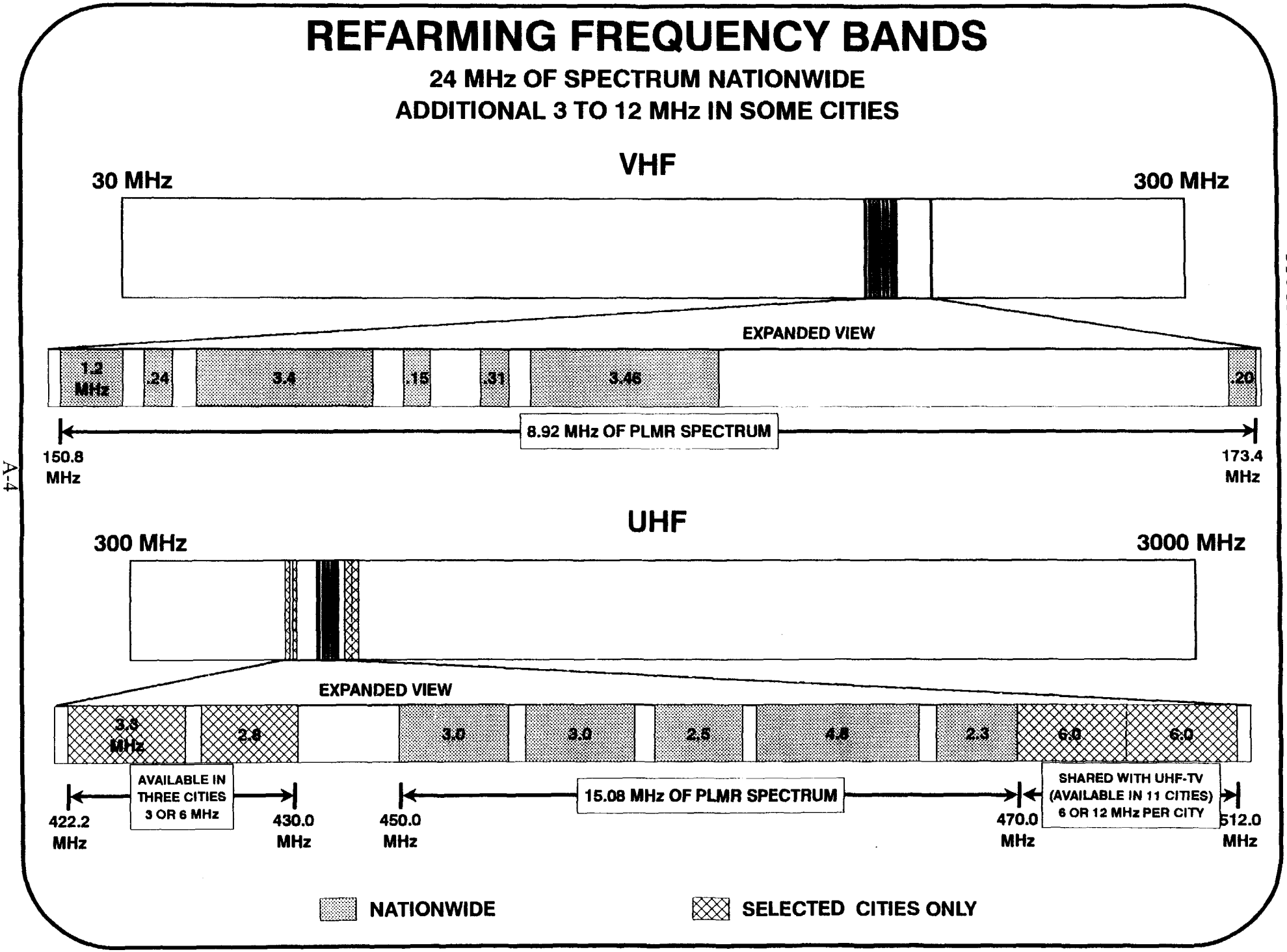

FIGURE 2 - REFARMING FREQUENCY BANDS

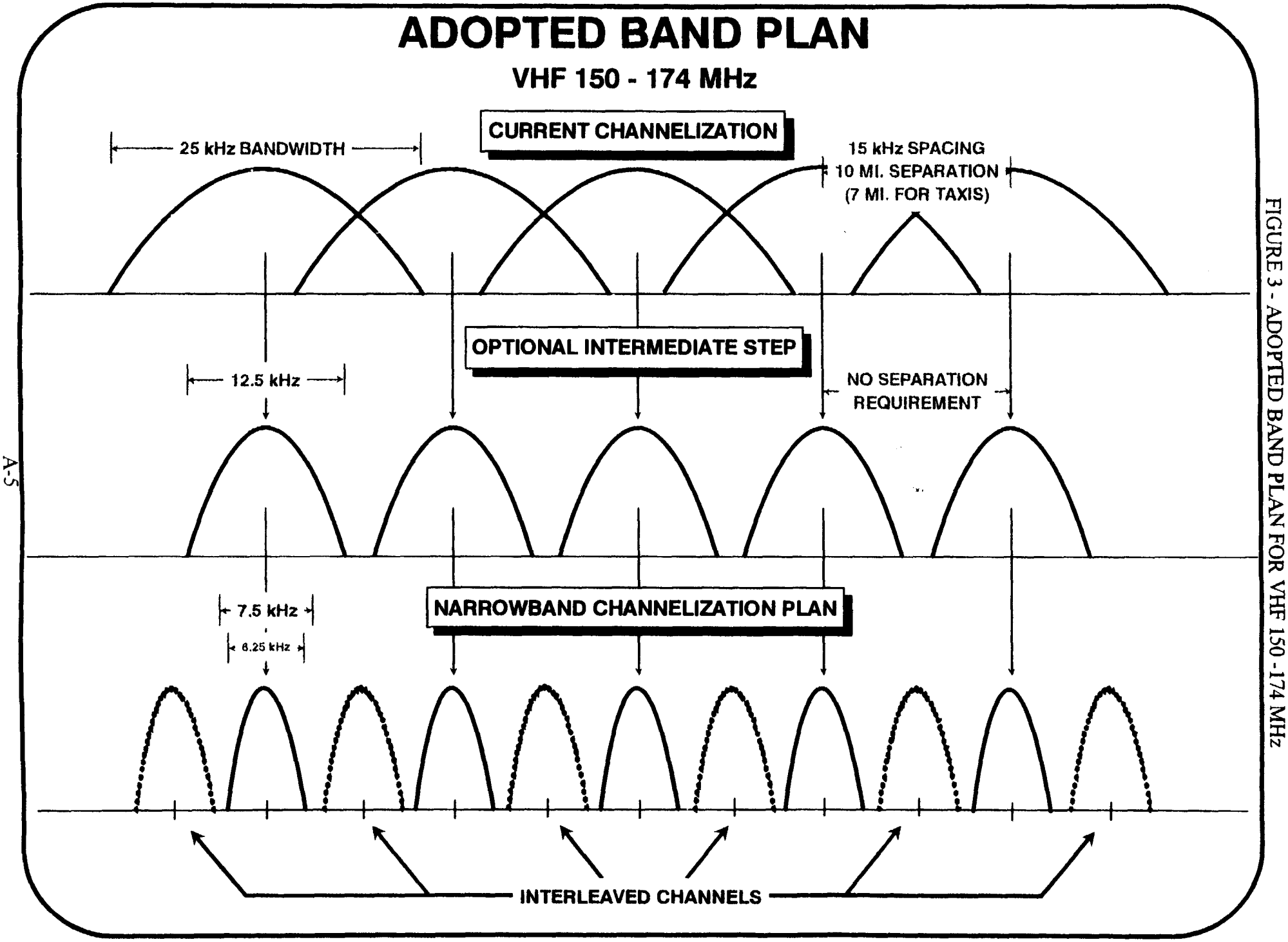

FIGURE 3 - ADOPTED BAND PLAN FOR VHF 150 - 174 MHz

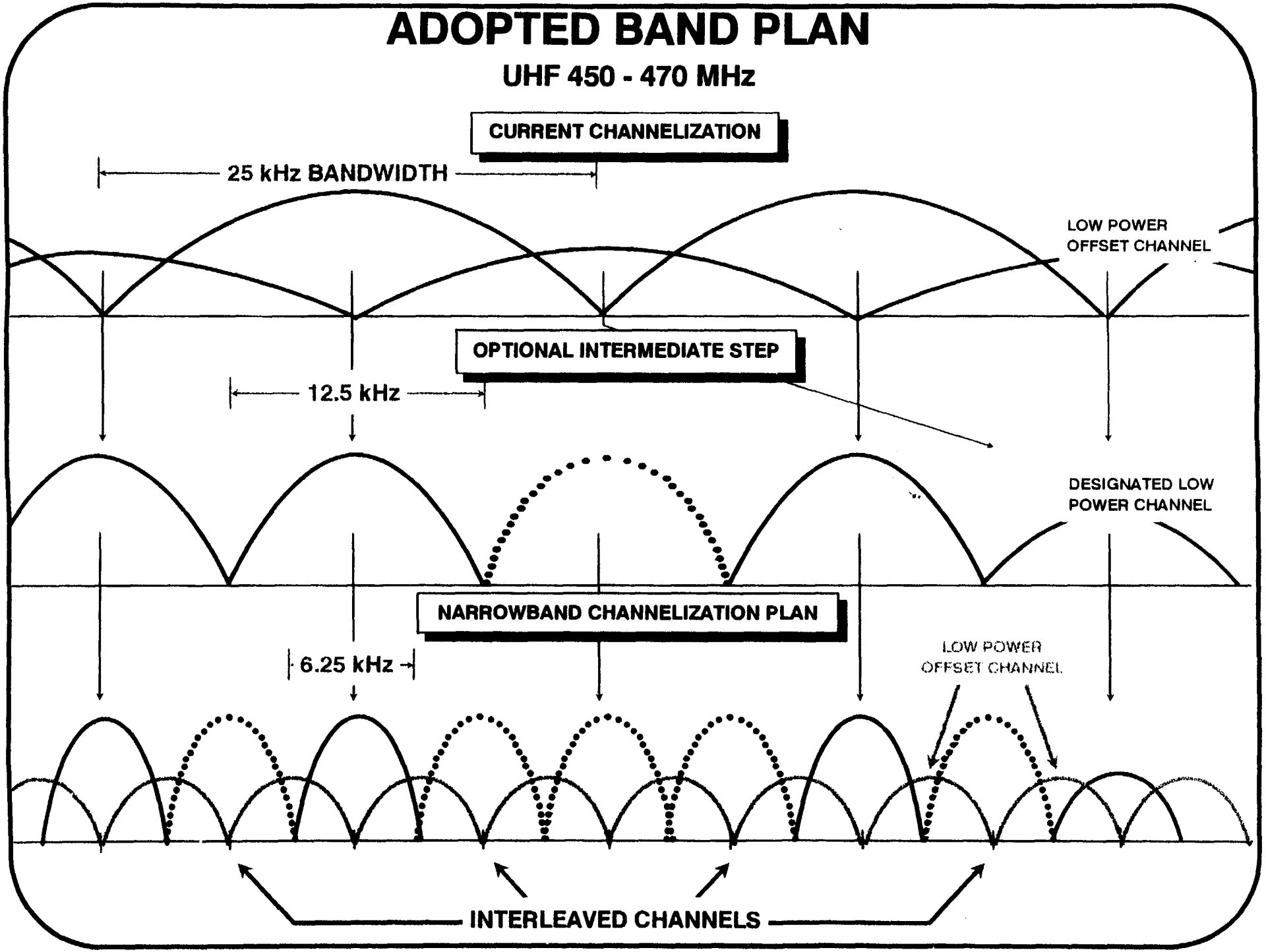

FIGURE 4 - ADOPTED BAND PLAN FOR UHF 450 -470 MHz

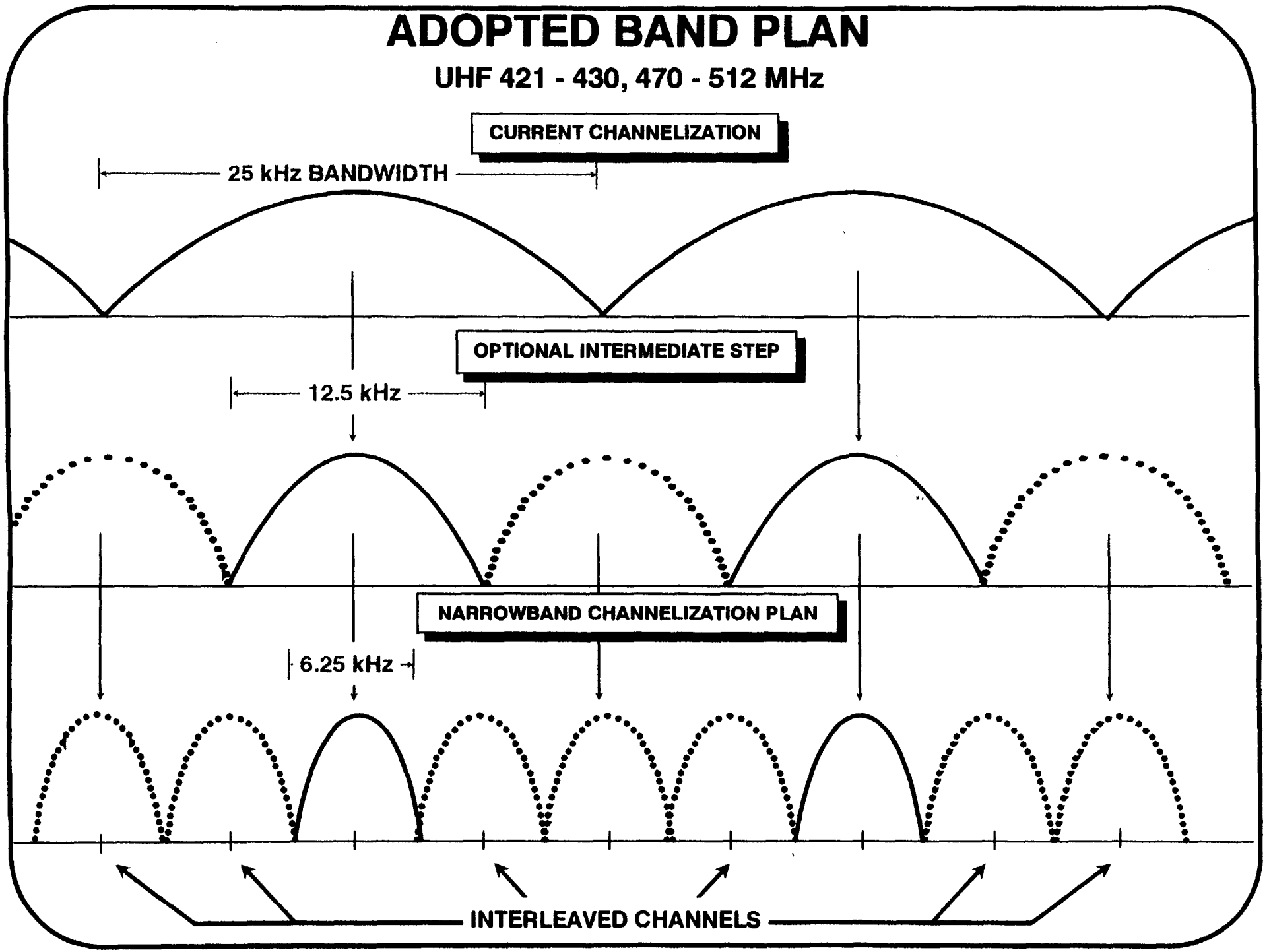

FIGURE 5 - ADOPTED BAND PLAN FOR UHF 421 -430 MHz, 470 - 512 MHz

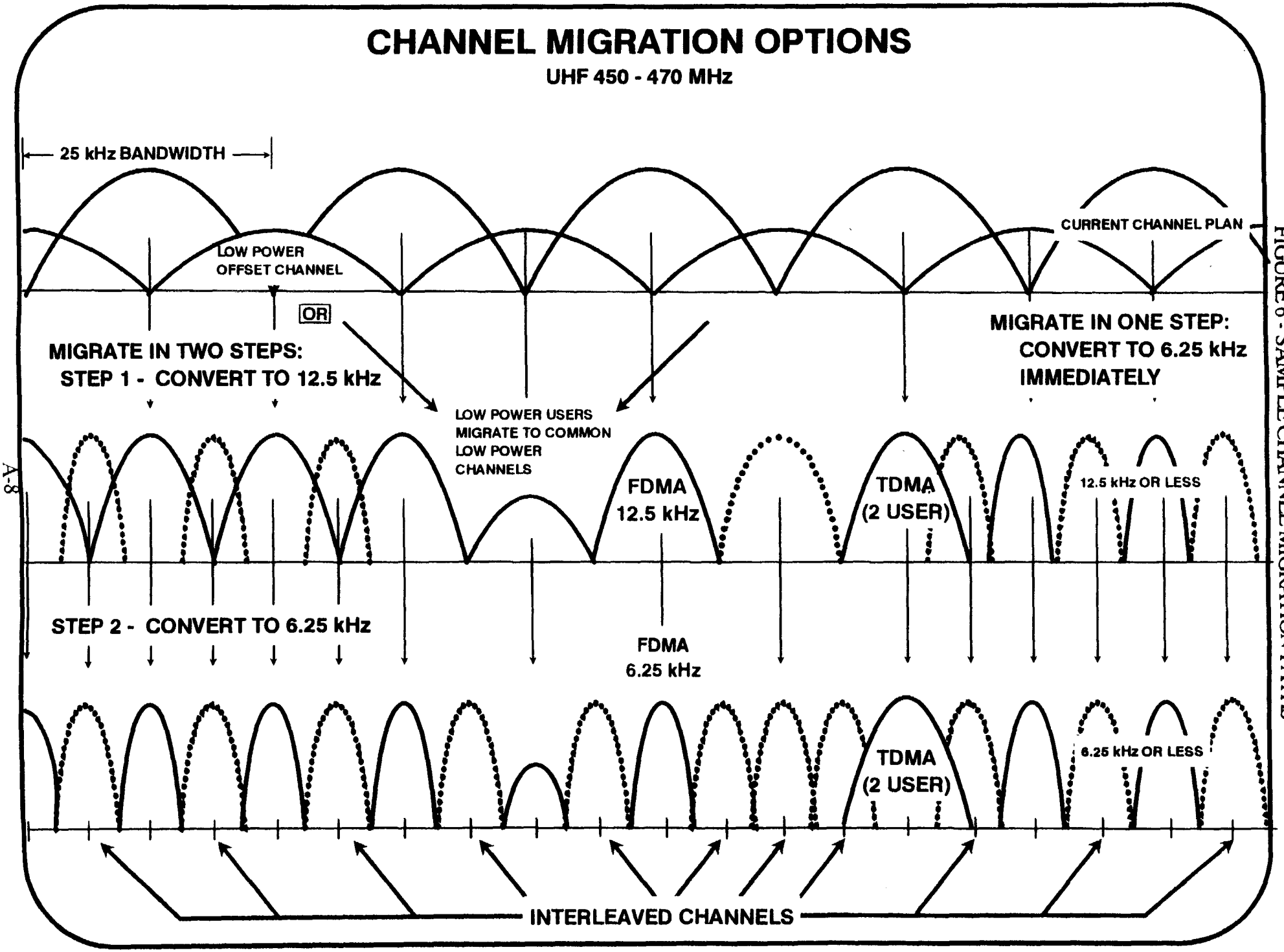

FIGURE 6 - SAMPLE CHANNEL MIGRATION PATHS